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EXAMINER

PONIKIEWSKI, TOMASZ

ART UNIT	PAPER NUMBER
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2165

DATE MAILED: 06/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/733,973	Applicant(s) DETTINGER ET AL.	
	Examiner Tomasz Ponikiewski	Art Unit 2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/11/2003</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. Claims 1- 34 are pending.

Claim Objections

2. Claim 1 is objected to because of the following informalities: on line 7 the recitation "whereby" should be changed to "includes" or "wherein". Appropriate correction is required.

Claim 15 is objected to because of the following informalities: on line 8 the recitation "whereby" should be changed to "includes" or "wherein". Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1, 10, 15-28, and 31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1, 10, 15, 24 and 32 do not list any hardware (i.e. computer) tied to the steps in order to operate the steps of the claims therefore resulting in software only implementation. For example, in claims 15 and 24 although the preamble recites "computer readable medium", the program has to be run (i.e.

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executed) on something. Who and where is the execution taking place? Claims should be amended to recite cpu/processor or computer.

Claim 31 does not present any tangible outcome or concrete result. It has no functionality. It is only tied to a data structure that does not include transformation or manipulation of data.

Claims 1, 10, and 29-32 recite the word "for" in the preamble. It indicates intended use and as such does not carry patentable weight. The limitations following the phrase "for" describes only intended use but not necessarily required functionality of the claim. Limitations following the phrase "for" do not carry patentable weight, which cause the claims to appear as a series of non-functional descriptive material/data without any functional relation with each other.

Claims 15-28 are not limited to tangible embodiments. In view of applicant's disclosure, specification page 7, paragraph 0029, the medium is not limited to tangible embodiments. As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

To overcome this type of 101 rejection the claims need to be amended to include only the physical computer media and not a signal-bearing media or other intangible or non-functional media. For this specification, signal-bearing media may not be statutory as it may include medium that is not statutory.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 8, 22, and 31-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "a step". The limitation is not defined and has multiple occurrences throughout the claims. It is not clear if it's the same step or one of multiple steps changing over time.

Claims 8 and 22 recites the limitation "the output" in line 4 and line 5 respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim 31 recites the limitation of "at least one step". Steps are part of method claim and cannot be part of structure.

Claims 31-34 recite the limitation "functional module". It is unclear to the examiner what those modules are and how they connect with the invention.

Claim Rejections - 35 USC § 102

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6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Li (US 6,748,386 B1).

As per claim 1 Li is directed to a method for execution of a multi-step workflow that is repeatedly executed on data of a database, the method comprising:

receiving current input for execution of a step of the workflow on relevant data of the database, wherein the step has been previously executed on the relevant data using previous input identical to the current input and wherein the previous execution of the step produced previous output (column 6, lines 55-56; column 7, lines 55-61);

determining whether the step is deterministic, whereby the step generates identical output for given input in repeated executions of the step on the relevant data (column 7, lines 54-61, wherein the cached results would not be retrieved if the query wasn't the same);

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and if the step is deterministic, returning the previous output produced during the previous execution of the step without re-executing the step (column 7, lines 55-61).

As per claim 2 Li is directed to comprising using the returned previous output as input to a next sequential step in the workflow (column 7, lines 54-61, wherein saved and retrieved once may mean it could be used again for next step in the process).

As per claim 3 Li is directed to determining whether the step is deterministic comprises determining whether a workflow description of the step includes a deterministic flag indicating that the step generates identical output for given input in repeated executions of the step on the relevant data (column 7, lines 54-61, wherein since the saved result is retrieved that means there is some sort of indicator like a flag to show that the output is the same).

As per claim 4 Li is directed to determining whether the current input and the previous input are the same (column 7, lines 57-61, wherein since the saved result is retrieved means that there was a process of determination);

and returning the previous output produced during the previous execution of the step only if the current input and the previous input are determined to be the same (column 7, lines 57-61).

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As per claim 5 Li is directed to determining whether the current input and the previous input are the same comprises accessing a hash table representative of the previous input (column 7, lines 52-53, wherein has table could be cache).

As per claim 6 Li is directed to determining whether the relevant data has been changed since the previous execution (column 7, lines 25-28);

and returning the previous output produced during the previous execution of the step only if the relevant data has not been changed (column 7, lines 57-61).

As per claim 7 Li is directed to determining whether the relevant data has been changed comprises:

determining a timestamp indicating a point of time of the previous execution (column 7, lines 53-55);

and determining, from a transaction log of the database, whether transactions relative to the relevant data have occurred since the point of time indicated by the timestamp (column 7, lines 61-66).

As per claim 8 Li is directed to comprising:

if the relevant data has been changed since the previous execution:
executing the step on the relevant data to obtain a result (column 6, lines 55-57);

and storing the result as the output to be returned for subsequent invocations of the step taking input identical to the current input, in which case execution of the step is avoided and the stored output is returned for the step (column 7, lines 7-9).

As per claim 9 Li is directed to wherein the current input comprises one or more result fields and input parameters (column 6, lines 13-14, wherein “input parameters” could be multiple “parameters”).

As per claim 10 Li is directed to a method for managing execution of a workflow that is repeatedly executed on data of a database, the method comprising:

receiving current input for execution of a step of the workflow on relevant data of the database, wherein the step generates identical output for given input in repeated executions of the step on the relevant data (column 7 lines 3-7);

and without executing the step using the current input, returning output obtained in a previous execution of the step using input identical to the current input (column 7, lines 52-61).

As per claim 11 Li is directed to further comprising, prior to returning the output:

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determining whether the step has been previously executed using the input identical to the current input (column 7, lines 3-7, wherein the wrapper can then check if identical query has been executed);

if so, determining whether the relevant data has been changed since the previous execution of the step using the input identical to the current input (column 7, lines 25-28);

and if the relevant data has not been changed, retrieving the output obtained in the previous execution of the step using the input identical to the current input (column 7, lines 57-59).

As per claim 12 Li is directed to determining whether the relevant data has been changed comprises:

determining a timestamp indicating a point of time of the previous execution (column 7, lines 54-57);

and determining, from a transaction log of the database, whether transactions relative to the relevant data have occurred since the point of time indicated by the timestamp (column 7, lines 62-66).

As per claim 13 Li is directed to further comprising:

if the step has not been executed using the input identical to the current input (column 7, lines 57-59, wherein the cache has no instance of stored transaction):

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executing the step for the current input on the relevant data to obtain a result (column 6, lines 64-67; column 7, lines 1-3);

and storing the result to enable managing a next invocation of the step in which the step is passed input identical to the current input, in which case the stored result is returned as output for the step without re-executing the step (column 7, lines 57-61).

As per claim 14 Li is directed to further comprising:

if the relevant data has been changed since the previous execution of the step using the input identical to the current input (column 7, lines 62-67; column 8, lines 1-4):

executing the step for the current input on the relevant data to obtain a result (column 6, lines 64-67; column 7, lines 1-3);

and storing the result to enable managing a next invocation of the step in which the step is passed input identical to the current input, in which case the stored result is returned as output for the step without re-executing the step (column 7, lines 57-61).

As per claim 15 Li is directed to a computer readable medium containing a program which, when executed, performs an operation of managing execution of a multi-step workflow that is repeatedly executed on data of a database, the operation comprising:

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receiving current input for execution of a step of the workflow on relevant data of the database, wherein the step has been previously executed on the relevant data using previous input identical to the current input and wherein the previous execution of the step produced previous output (column 6, lines 55-56; column 7, lines 55-61);

determining whether the step is deterministic, whereby the step generates identical output for given input in repeated executions of the step on the relevant data (column 7, lines 54-61, wherein the cached results would not be retrieved if the query wasn't the same);

and if the step is deterministic, returning the previous output produced during the previous execution of the step without re-executing the step (column 7, lines 55-61).

As per claim 16 Li is directed to the operation further comprises: inputting the returned previous output to a next sequential step in the workflow (column 7, lines 55-61).

As per claim 17 Li is directed to determining whether the step is deterministic comprises determining whether a workflow description of the step includes a deterministic flag indicating that the step generates identical output for given input in repeated executions of the step on the relevant data (column 7, lines 54-61, wherein since the saved result is retrieved that means there is some sort of indicator like a flag to show that the output is the same).

As per claim 18 Li is directed to the operation further comprises:

determining whether the current input and the previous input are the same (column 7, lines 57-61, wherein since the saved result is retrieved means that there was a process of determination);

and returning the previous output produced during the previous execution of the step only if the current input and the previous input are determined to be the same (column 7, lines 57-61).

As per claim 19 Li is directed to determining whether the current input and the previous input are the same comprises accessing a hash table representative of the previous input (column 7, lines 52-53, wherein has table could be cache).

As per claim 20 Li is directed to the operation further comprises:

determining whether the relevant data has been changed since the previous execution (column 7, lines 25-28);

and returning the previous output produced during the previous execution of the step only if the relevant data has not been changed (column 7, lines 57-61).

As per claim 21 Li is directed to determining whether the relevant data has been changed comprises:

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retrieving a timestamp indicating a point of time of the previous execution (column 7, lines 53-55);

and retrieving a transaction log of the database (column 7, line 59, wherein the log is the query holding the query information);

and determining, from the transaction log, whether transactions relative to the relevant data have occurred since the point of time indicated by the timestamp (column 7, lines 61-66).

As per claim 22 Li is directed to the operation further comprises:

if the relevant data has been changed since the previous execution:

executing the step on the relevant data to obtain a result (column 6, lines 55-57);

and storing the result as the output to be returned for subsequent invocations of the step taking input identical to the current input, in which case execution of the step is avoided and the stored output is returned for the step (column 7, lines 7-9).

As per claim 23 Li is directed to the current input comprises one or more result fields and input parameters (column 6, lines 13-14, wherein "input parameters" could be multiple "parameters").

As per claim 24 Li is directed to a computer readable medium containing a program which, when executed, performs an operation of managing execution of

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a workflow that is repeatedly executed on data of a database, the operation comprising:

receiving current input for execution of a step of the workflow on relevant data of the database, wherein the step generates identical output for given input in repeated executions of the step on the relevant data (column 6, lines 64-67; column 7, lines 1-7);

and without executing the step using the current input, returning output obtained in a previous execution of the step using input identical to the current input (column 7, lines 52-61).

As per claim 25 Li is directed to the operation further comprises, prior to returning the output:

determining whether the step has been previously executed using the input identical to the current input (column 7, lines 3-7, wherein the wrapper can then check if identical query has been executed);

if so, determining whether the relevant data has been changed since the previous execution of the step using the input identical to the current input (column 7, lines 25-28);

and if the relevant data has not been changed, retrieving the output obtained in the previous execution of the step using the input identical to the current input (column 7, lines 57-59).

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As per claim 26 Li is directed to determining whether the relevant data has been changed comprises:

retrieving a timestamp indicating a point of time of the previous execution (column 7, lines 53-55);

retrieving a transaction log of the database (column 7, line 59, wherein the log is the query holding the query information);

and determining, from the transaction log, whether transactions relative to the relevant data have occurred since the point of time indicated by the timestamp (column 7, lines 61-66).

As per claim 27 Li is directed to the operation further comprises:

if the step has not been executed using the input identical to the current input (column 7, lines 57-59, wherein the cache has no instance of stored transaction):

executing the step for the current input on the relevant data to obtain a result (column 6, lines 64-67; column 7, lines 1-3);

and storing the result to enable managing a next invocation of the step in which the step is passed input identical to the current input, in which case the stored result is returned as output for the step without re-executing the step (column 7, lines 57-61).

As per claim 28 Li is directed to the operation further comprises:

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if the relevant data has been changed since the previous execution of the step using the input identical to the current input (column 7, lines 62-67; column 8, lines 1-4):

executing the step for the current input on the relevant data to obtain a result (column 6, lines 64-67; column 7, lines 1-3);

and storing the result to enable managing a next invocation of the step in which the step is passed input identical to the current input, in which case the stored result is returned as output for the step without re-executing the step (column 7, lines 57-61).

As per claim 29 Li is directed to a computer system, comprising:

a database having data (column 3, lines 50-52);

and a workflow execution manager residing in memory for managing execution of a multi-step workflow that is repeatedly executed on the data of the database, the workflow execution manager being configured for (column 6, lines 55-68):

receiving current input for execution of a step of the workflow on relevant data of the database, wherein the step has been previously executed on the relevant data using previous input identical to the current input and wherein the previous execution of the step produced previous output (column 6, lines 55-56; column 7, lines 55-61);

determining whether the step is deterministic, whereby the step generates identical output for given input in repeated executions of the

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step on the relevant data (column 7, lines 54-61, wherein the cached results would not be retrieved if the query wasn't the same);

and if the step is deterministic, returning the previous output produced during the previous execution of the step without re-executing the step (column 7, lines 55-61).

As per claim 30 Li is directed to a computer system, comprising:

a database having data (column 3, lines 50-52);

and a workflow execution manager residing in memory for managing execution of a workflow that is repeatedly executed on the data of the database, the workflow execution manager being configured for (column 6, lines 55-68):

receiving current input for execution of a step of the workflow on relevant data of the database, wherein the step generates identical output for given input in repeated executions of the step on the relevant data (column 6, lines 55-56; column 7, lines 55-61);

and without executing the step using the current input, returning output obtained in a previous execution of the step using input identical to the current input (column 7, lines 57-61).

As per claim 31 Li is directed to a data structure residing in memory, comprising:

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a specification of at least one step of a multi-step workflow, the specification including (column 7, lines 5-6, wherein "specification" could mean "mapping"):

an indication of at least one functional module adapted for execution of the at least one step (column 7, line 6) ;

and a deterministic flag indicating whether the at least one step generates identical output for given input in repeated executions of the step on relevant data of a database (column 7, lines 2-3, wherein the timestamp indicates whether the query has been executed before or not.).

As per claim 32 Li is directed to a method for automatically executing a plurality of functional modules from within an application, comprising:

providing an interface for specifying a single multi-analysis functional module used to execute the plurality of functional modules (figure 2a, reference number 54);

receiving current input for execution of at least one of the functional modules, wherein the at least one functional module has been previously executed using previous input identical to the current input (column 6, lines 64-67; column 7, lines 1-7; column 7, lines 57-61);

determining whether the at least one functional module is deterministic, whereby the at least one functional module generates identical output for given input in repeated executions of the at least one functional module (column 7,

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lines 54-61, wherein the cached results would not be retrieved if the query wasn't the same);

and if the at least one functional module is deterministic, returning previous output produced during the previous execution without re-executing the at least one functional module (column 7, lines 55-61).

As per claim 33 Li is directed to comprising retrieving information regarding execution of the plurality of functional modules from a configuration file (column 7, line 59, wherein "plurality of functional modules" means the "results" and "configuration file" means "cache").

As per claim 34 Li is directed determining whether the at least one functional module is deterministic comprises examining information regarding the at least one functional module retrieved from the configuration file (column 7, lines 61-66).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tomasz Ponikiewski whose telephone number is (571)272-1721. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can be reached on (571)272-4146. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tomasz Ponikiewski
June 1, 2006

Apur Moiz
Primary Examiner
TC 2100